from the electronic device, this invention can be used as a package for a single port device.

It should also be understood that the package of this invention can be used to package an acoustic wave device which has active acoustic regions on both the upper and lower surfaces of the die on which, or in which, the device is fabricated, simply by attaching a first lid to the upper surface of the die the in the manner of this invention, and attaching a second lid to the lower surface of the die in the same manner.

5. Claims

We claim:

a chip-scale package for an electronic device of the type having an acoustically active portion comprising:

a die having an upper surface and having at least one electronic device located at the upper surface of the die and having a plurality of signal connector pads located upon the upper surface of the die and having a bonding strip located upon the upper surface of the die,

a lid made of a substantially non-conducting material and having a lower surface and an upper surface and having a lower

surface bonding strip and a plurality of lower surface signal connector pads located upon the lower surface of the lid and having a plurality of upper surface signal connector pads located upon the upper surface of the lid, each upper surface signal connector pad being electrically connected to a lower surface signal connector pad,

each lower surface signal connector pad on the lid being electrically connected to a signal connector pad located upon the upper surface of the die,

the bonding strip located upon the upper surface of the die being bonded by a bonding material to the bonding strip located upon the lower surface of the lid, the lid covering the electronic device but not being in physical contact with the acoustically active portion of the electronic device.

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The package of claim 1 wherein each upper surface signal connector pad is electrically connected to a lower surface signal connector pad by means of conducting material located within a hole in the substantially non-conducting material of the lid, which hole connects the upper surface of the lid to the lower surface of the lid.

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The package of claim 1 wherein the bonding strip on the upper surface of the die and the bonding strip on the lower surface of the lid are made of conducting material and are electrically connected by the bonding material, the lid further including a conducting strip on the upper surface of the lid that is electrically connected to the bonding strip on the lower surface of the lid.

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The package of claim 2 wherein the bonding strip on the upper surface of the die and the bonding strip on the lower surface of the lid are made of conducting material and are electrically connected by the bonding material, the lid further including a conducting strip on the upper surface of the lid that is electrically connected to the bonding strip on the lower surface of the lid by means of conducting material located within a hole in the substantially non-conducting material of the lid, which hole connects the upper surface of the lid to the lower surface of the lid.

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The package of claim 1 in which the conducting strip on the upper surface of the lid and the bonding strip on the lower

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surface of the lid and the bonding strip on the upper surface of the die act as a signal ground.

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The package of claim 3 in which the conducting strip on the upper surface of the lid and the bonding strip on the lower surface of the lid and the bonding strip on the upper surface of the die act as a signal ground.

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The package of claim 1 in which the bonding strip on the upper surface of the die and the bonding strip on the lower surface of the lid completely surround the acoustically active portion of the electronic device and are bonded together so as to seal the electronic device hermetically.

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The package of claim 2 in which the bonding strip on the upper surface of the die and the bonding strip on the lower surface of the lid completely surround the acoustically active portion of the electronic device and are bonded together so as to seal the electronic device hermetically.

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The package of claim ~~4~~ 3 in which the bonding strip on the upper surface of the die and the bonding strip on the lower surface of the lid completely surround the acoustically active portion of the electronic device and are bonded together so as to seal the electronic device hermetically.

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~~10~~

The package of claim ~~6~~ 4 in which the bonding strip on the upper surface of the die and the bonding strip on the lower surface of the lid completely surround the acoustically active portion of the electronic device and are bonded together so as to seal the electronic device hermetically.

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A chip-scale package for an electronic device of the type having an acoustically active portion comprising:

a die having an upper surface and having ~~at least one~~ the electronic device located at the upper surface of the die and having a signal connector pad located upon the upper surface of the die and having a bonding strip located upon the upper surface of the die,

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a lid made of a substantially non-conducting material and having a lower surface and an upper surface and having a lower surface bonding strip and a lower surface signal connector pad located upon the lower surface of the lid and having an upper surface signal connector pad located upon the upper surface of the lid, the upper surface signal connector pad being electrically connected to the lower surface signal connector pad,

the lower surface signal connector pad on the lid being electrically connected to the signal connector pad located upon the upper surface of the die,

the bonding strip located upon the upper surface of the die being bonded by a bonding material to the bonding strip located upon the lower surface of the lid, the lid covering the electronic device but not being in physical contact with the acoustically active portion of the electronic device,

wherein the bonding strip on the upper surface of the die and the bonding strip of the lid are electrically conductive, the lid further including a conducting strip on the upper surface of the lid that is electrically connected to the bonding strip on the lower surface of the lid.

The package of claim 11 in which the bonding strip on the upper surface of the die and the bonding strip on the lower

surface of the lid completely surround the acoustically active portion of the electronic device and are bonded together so as to seal the electronic device hermetically.